

# **Plaintiffs' Exhibit 32**

## **(Redacted)**

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF VIRGINIA**

**Alexandria Division**

UNITED STATES, et al.,	)	
	)	
Plaintiffs,	)	
v.	)	No. 1:23-cv-00108-LMB-JFA
	)	
GOOGLE LLC,	)	
	)	
Defendant.	)	

**DECLARATION OF GABRIEL WEINTRAUB  
IN SUPPORT OF PLAINTIFFS' OPPOSITION TO  
GOOGLE'S MOTION FOR SUMMARY JUDGMENT**

Gabriel Weintraub, PhD., being duly cautioned, declares as follows:

1. I am over 21 years old and am competent to testify about the matters in this Declaration based on my personal knowledge.
2. Attached hereto as Exhibit A is a true and correct copy of the December 22, 2023, Expert Report of Gabriel Weintraub, PhD, along with associated errata. Attached hereto as Exhibit B is a true and correct copy of the February 13, 2024, Expert Rebuttal Report of Gabriel Weintraub, PhD, along with associated errata.
3. I authored the attached Expert Reports identified in Item (2) above and understood at the time I signed them that they were being prepared for use in this litigation. I am prepared to testify at trial, under oath, to the matters set forth in these reports. My statements set forth in these reports, as modified by associated errata, are true and correct to the best of my knowledge.
4. The exhibits attached to the reports described in Item (2) are true and correct copies.

I declare under penalty of perjury under the laws of the United States of America that the foregoing statements in this Declaration are true and correct.

Dated: 5/10/2024

Signed:  \_\_\_\_\_

Gabriel Weintraub, PhD.

City and Country: Santiago, Chile

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**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF VIRGINIA  
ALEXANDRIA DIVISION**

United States of America, *et al.*,

**Plaintiffs,**

**v**

Google LLC,

**Defendant.**

**Case No. 1:23-cv-00108**

**HON. LEONIE H. M. BRINKEMA**

**EXPERT REPORT OF  
GABRIEL WEINTRAUB, PH.D.**

**DECEMBER 22, 2023**

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211. Lastly, as I discuss next in Section VI.C.1, Google implemented a program called Project Poirot, which reduced DV360's bids into exchanges that "[REDACTED]" starting in 2017.<sup>491</sup> As discussed above, in the dynamic region, AdX used sell side dynamic revenue sharing to charge advertisers a different amount depending on their exact bids. As a result, AdX was not a true second price auction due to sell side dynamic revenue sharing, and absent alterations to sell side dynamic revenue sharing or Project Poirot, the former may have triggered Project Poirot to shade DV360's bids into AdX. However, Google implemented sell side dynamic revenue sharing in a way that AdX could avoid triggering Project Poirot, which would have resulted in DV360 reducing its bids submitted to AdX as well. In particular, Google documents indicate that around 2016, Google [REDACTED] DV360 from Sell Side DRS V1, and that Google did not plan to activate Sell Side DRS V2 for DV360.<sup>492</sup> Further, Google documents indicate that tDRS's design [REDACTED]  
[REDACTED]<sup>493</sup> Google's integration between the sell side and buy side was critical to execute these strategies. Furthermore, without knowing the details of both sell side dynamic revenue sharing and Project Poirot, Google's rivals did not have the same opportunity to work around Project Poirot in their auction design.

### **VI.B.2. Impact of Google's Sell Side Dynamic Revenue Sharing on Rival Exchanges' Scale**

212.

[REDACTED]  
[REDACTED]  
[REDACTED]

491

[REDACTED]  
*see also*, Ravi Report, Section III.D.2.a.

492

[REDACTED]  
[REDACTED]  
[REDACTED]

493

[REDACTED]  
[REDACTED]  
[REDACTED]

494 [REDACTED]

495 [REDACTED]

496 [REDACTED]

497 [REDACTED]

498 [REDACTED]

See also, “Line item types and priorities,”  
Google Ad Manager Help, Google, accessed December 17, 2023,  
<https://support.google.com/admanager/answer/177279> (“House line items only serve when no remnant line  
items (Network, Bulk, Price Priority), Ad Exchange or Open Bidding demand are available to serve.”).

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[REDACTED]

[REDACTED]

213. [REDACTED]

214. As I did in Sections VI.A.2 (“last look”), I use Google’s experiments to estimate the potential effect of sell side dynamic revenue sharing on rival exchange scale. [REDACTED]

[REDACTED]

---

[REDACTED]

499 [REDACTED]

500 [REDACTED]

501 [REDACTED]

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[REDACTED]

215.

[REDACTED]

216.

[REDACTED]

---

502

[REDACTED]

503

[REDACTED]

504

[REDACTED]

[REDACTED]

505

[REDACTED]

506

[REDACTED]

507

[REDACTED]

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[REDACTED]

217.

[REDACTED]

---

508

[REDACTED]

509

[REDACTED]

510

[REDACTED]



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**TABLE 3: EFFECTS OF SELL SIDE DYNAMIC REVENUE SHARE ON RIVAL EXCHANGES**

Category	Value
Category 1	Value 1
Category 2	Value 2
Category 3	Value 3

### Sources and Notes:

Sources and Notes:

218.

[REDACTED]

Category	Value
Category 1	10
Category 2	20
Category 3	30

Sources and Notes:

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[REDACTED]

[REDACTED]

220. [REDACTED]  
[REDACTED]  
[REDACTED] Recall that in first price auctions, it is optimal for bidders to reduce their bids (Section II.A.1). [REDACTED]  
[REDACTED]  
[REDACTED]

221. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

---

511 See Ravi Report, Section III.D.4.; [REDACTED]  
[REDACTED]

512 See Ravi Report, Section III.D.2.; [REDACTED]  
[REDACTED]

513 See Ravi Report, Section III.D.4.; [REDACTED]  
[REDACTED]

514 See Ravi Report, Section III.D.2.; [REDACTED]

515 [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

516 [REDACTED]  
[REDACTED]

[REDACTED]

222.

[REDACTED]

---

[REDACTED]

517 [REDACTED]

518 [REDACTED]

519 See Ravi Report, Section III.D.2. ; [REDACTED]

520 [REDACTED]

521 [REDACTED]

223.

224.

<sup>522</sup> See Ravi Report, Section III.D.2.

<sup>524</sup> See Ravi Report, Section III.D.2. [REDACTED] See Ravi Report, Appendix F.1.

526 See Ravi Report, Appendix F.1;

527 [REDACTED]

<sup>528</sup> See Ravi Report, Appendix F.2.

[REDACTED]

225. Because Google owns both DV360 and AdX, Google had a particular incentive to reduce bids into rival exchanges and in that way provided AdX with an advantage. [REDACTED]

[REDACTED]

Therefore, to the extent that Poirot resulted in DV360's bids on rival exchanges falling beneath those exchanges' price floors, AdX benefitted from Poirot, and rival exchanges were harmed by it.

226. [REDACTED]

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<sup>529</sup> See Ravi Report, Section III.D.2.a. and Appendix F.2; [REDACTED]

<sup>530</sup> See Ravi Report, Section III.D.2.

<sup>531</sup> See Ravi Report, Section III.D.2.c.; [REDACTED] See also, Ravi Report, Section III.D.2.a.

<sup>532</sup> See Ravi Report, Section III.C.; [REDACTED]

<sup>533</sup> See Ravi Report, Section III.A.2 and Appendix C.5; [REDACTED]

<sup>534</sup> See Ravi Report, Section III.D.1.; [REDACTED]

[REDACTED]

## VI.C.2. Impact of Project Poirot on Rival Exchanges' Scale

227. [REDACTED]

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535 See Ravi Report, Section III.D.4. and Section III.C.3..

536 [REDACTED]

537 See Ravi Report, Section III.D.4. [REDACTED]

538 See GOOG-AT-MDL-007393625 [REDACTED]

539 See Ravi Report. [REDACTED]

540 [REDACTED]

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Gabriel Weintraub, Ph.D.

December 22, 2023



## Expert Report of Gabriel Weintraub (December 22, 2023)--Errata


Page	Paragraph	Footnote	Original	Corrected	Reason
7	16	6	"ad.spend"	"ad spend"	Typo
11	22	10	"See, e.g., "Internet Advertising Revenue Report," PwC, iab, April 2023, <a href="https://www.iab.com/wpcontent/uploads/2023/04/IAB_PwC_Internet_Advertising_Revenue_Report_2022.pdf">https://www.iab.com/wpcontent/uploads/2023/04/IAB_PwC_Internet_Advertising_Revenue_Report_2022.pdf</a> "	"See, e.g., "Internet Advertising Revenue Report," PwC, iab, April 2023, <a href="https://www.iab.com/wpcontent/uploads/2023/04/IAB_PwC_Internet_Advertising_Revenue_Report_2022.pdf">https://www.iab.com/wpcontent/uploads/2023/04/IAB_PwC_Internet_Advertising_Revenue_Report_2022.pdf</a> , at 15"	Clarification
12	25	.	"The tools to run RTB auctions for the purchase and sale of online display ads is called..."	"The tools to run RTB auctions for the purchase and sale of online display ads are called..."	Typo
17	33	41	"(e.g., the average spend for each conversion should not exceed a pre-specified target).")."	"(e.g., the average spend for each conversion should not exceed a pre-specified target).") (emphasis in original)."	Clarification
19	34	47	"at 3968"	"at 3952"	Correction
23	43	71	"using machine algorithms"	"using machine learning algorithms"	Clarification
24	44	77	"no. 1 (2014)"	"no. 1 (2015)"	Typo
25	46	88	"EC '22: Proceedings of the 2023 ACM Conference on Economics and Computation 2023"	"EC '22: Proceedings of the 23rd ACM Conference on Economics and Computation"	Typo
25	46	88	"no. 1 (2023)"	"no. 1 (2022)"	Typo
25	46	90	"EC '22: Proceedings of the 2023 ACM Conference on Economics and Computation 2023"	"EC '22: Proceedings of the 23rd ACM Conference on Economics and Computation"	Typo
25	46	90	"no. 1 (2023)"	"no. 1 (2022)"	Typo
26	46	90	"(2023): 1–35, at 6"	"(2023): 1–35, at 6–7"	Clarification
26	46	91	"EC '22: Proceedings of the 2023 ACM Conference on Economics and Computation 2023"	"EC '22: Proceedings of the 23rd ACM Conference on Economics and Computation"	Typo
26	46	91	"no. 1 (2023)"	"no. 1 (2022)"	Typo
26	47	93	"See Lee Report, Section II.C.3. and Section II.C.3., explaining..."	"See Lee Report, Section II.C.3., explaining..."	Typo
28	51	.	"Google Ad Manager ("GAM"), which includes a publisher ad server, and an ad exchange/SSP."	"Google Ad Manager ("GAM"), which includes a publisher ad server and an ad exchange/SSP."	Typo
32	59	132	" $\theta'(x)$ "	" $\theta'(x)$ "	Typo
36	68	143	"("we use the <i>market thickness</i> to represent the average number of ads competing for user impressions on an online advertising platform.") (emphasis in original);"	"("we use the <i>market thickness</i> to represent the average number of ads competing for user impressions on an online advertising platform.");"	Correction
38	70	154	"955–1025"	"965–1025"	Typo
38	70	157	"955–1025"	"965–1025"	Typo
56	93	225	"1849–1864, at 1850"	"1849–1864, at 1851"	Typo
60	98	243	"209–218, at 217"	"209–218, at 209"	Correction
60	98	244	"209–218, at 217"	"209–218, at 216"	Correction
63	101	258	"24:8–26:14"	"24:8–26:6"	Clarification
64	102	261	"(Cambridge: MIT Press, 2021)"	"(Cambridge: MIT Press, 2020)"	Typo
64	102	262	"(Cambridge: MIT Press, 2021)"	"(Cambridge: MIT Press, 2020)"	Typo
64	102	263	"(Cambridge: MIT Press, 2021)"	"(Cambridge: MIT Press, 2020)"	Typo
66	104	269	"and 189–190"	"and 189"	Clarification

### Expert Report of Gabriel Weintraub (December 22, 2023)--Errata

[illegible]

## Expert Report of Gabriel Weintraub (December 22, 2023)--Errata

Page	Paragraph	Footnote	Original	Corrected	Reason
152	229	553	"Deposition of John Gentry (OpenX), October 26, 2023, 22:17–23 ("Our revenues went from - we were about [REDACTED] in 2017; 2018 we were about [REDACTED] because the first half of the year was strong; in 2019, we were down to about [REDACTED]; and in 2020, the combination of difficulties we had had plus COVID took us down to about [REDACTED] in net revenue in 2020.").	Switch with text in footnote 552.	Correction
152	229		. "The CEO of OpenX, John Gentry, testified that OpenX's revenues fell from [REDACTED] in 2017 to [REDACTED] 2019."	"The CEO of OpenX, John Gentry, testified that OpenX's revenues fell from [REDACTED] in 2017 to [REDACTED] 2019."	Typo
			[REDACTED]	[REDACTED]	
			[REDACTED]	[REDACTED]	
			[REDACTED]	[REDACTED]	
C-1	3.a.ii.	3	"Letter from David R. Pearl to Kelly Garcia, September 8, 2023, 2."	"Letter from David Pearl to Michael Freeman, September 8, 2023, 2."	Correction
D-10	22	17	"Letter from Julie Elmer to John Hogan, August 19, 2022, 5–6 8 (" [REDACTED]	"Letter from Julie Elmer to John Hogan, August 19, 2022, 5–6 (" [REDACTED]	Typo
E-2	2		. "exchanges' bids have the same variance that is characterized by the spread parameter"	"exchanges' bids have variance that is characterized by the same spread parameter"	Clarification
E-21	42	21	"Letter from David Pearl to Michael J. Freeman, July 28, 2023 ("	"Letter from David Pearl to Michael J. Freeman, July 28, 2023, 2 ("	Clarification
F-2	3	5	"John Rice, "11.2 Comparing Two Independent Samples", in Mathematical Statistics and Data Analysis, 3rd ed. (Duxbury: Thomson Brooks/Cole, 2007)."	"John Rice, "11.2 Comparing Two Independent Samples", in Mathematical Statistics and Data Analysis, 3rd ed. (Duxbury: Thomson Brooks/Cole, 2007), 421–444."	Clarification
F-5	11	12	("Rule of Thumb[:] The basic formula is $n=16/\Delta^2$ (2.3).").	("Rule of Thumb[:] The basic formula is $n=16/\Delta^2$ (2.3) where $\Delta=(\mu_0-\mu_1)/\sigma/\sigma$ (2.4).").	Clarification
F-5	11	12	$N/2=16 (p_p (1-p_p))/(p_1-p_0)$	$N/2=16 (p_p (1-p_p))/(p_1-p_0)^2$	Correction



January 13, 2024

Page	Paragraph	Footnote Original	Corrected	Reason
[REDACTED]	[REDACTED]	[REDACTED] [REDACTED]	[REDACTED]	[REDACTED]

February 23, 2024